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A New Commensal Polyclad from Panama

by

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(Plate 16)

While collecting prosobranch gastropods along the sea wall in Balboa Park, Panama City, Panama (9°0'N., 79°30'W.), an acotylean polyclad was found in the mantle cavity of Nerita (Ritena) scabricosta ornata Sowerby, 1823. The classification of the snail was determined by comparison with the text and figures of A. Myra Keen (1958, p. 266, figs. 81, 81 a). The gastropods were lodged in rock fissures in the supralittoral zone. The polyclads were seen in the shell aperture when the Nerita were removed from the substratum. When the snails were disturbed, the flatworms returned to the mantle cavity before the operculum closed the shell aperture. Some of the gastropods had as many as eight to ten large polyclads within the mantle cavity. As stated in an earlier paper (Smith, 1960, p. 385), the micro-plankton or detritus which enter the mantle cavity could hardly serve as food for a carnivorous polyclad. Since the polyclads were observed outside of the feeding gastropods, it would seem that the polyclads only used the snail's mantle cavity as a retreat after feeding and for the protection offered by a closed operculum.

Hoploplana luracola E. H. SMITH, spec. nov.

The living form is elongate, becoming slightly circular after preservation (Plate 16, figure 1). The largest preserved specimen measured 6.0 mm. by 3.0 mm. However, most of the animals are of about the same size (average of six measured specimens, 5.5 mm. by 3.0 mm.). The dorsal surface is smooth with a pair of short tentacles anteriorly.

The over-all color of the polyclad is light brown with slightly darker dots covering all of the dorsal surface. A dark brown stripe runs the length of the animal, mid-dorsally.

The tentacular eyes occur in groups around the bases of the tentacles and some appear to occur within the tentacles (Plate 16, figure 3). Each group consists of 14 to 16 tentacular eyes. The cerebral eyes number 19 to 33 in each cluster and form two irregular rows on opposite sides of the mid-dorsal line. The eye clusters extend both anteriorly and posteriorly from the tentacles.

In cleared specimens, eyes, ruffled pharynx, spermiducal bulbs, and uteri can be seen (Plate 16, figure 2).

The copulatory apparatus (Plate 16, figure 4) lies immediately behind the ruffled pharynx. The spermiducal bulbs are slightly muscular, lie ventrally and nearly transverse to the longitudinal axis of the body. The thin walled ejaculatory duct leaves the spermiducal bulb ventrally, coursing dorsally, and turns anteriorly to meet the male copulatory apparatus. The duct enters the prostatic vesicle from the ventral side. The stylet is straight and occupies nearly the entire length of the male antrum which is well defined and quite large.

The female genital pore lies directly behind the male opening and opens into a simple vagina which curves posteriorly. Scattered cement glands surround the vaginal region near the female gonopore.

Occurrence: Southern middle Panama, Pacific coast, Balboa Park. Panama City, in the pallial cavity of Nerita (Ritena) scabricosta ornata at low water-level; December 1960. 25 specimens. Holotype: One whole mount deposited in the American Museum of Natural History, New York, A.M.N.H. Cat. No. 501. Paratypes are in the U. S. National Museum, Washington, D. C. and the author's collection.

The word luracola is a Latin substantive in apposition and means sack dweller. The name was chosen to denote the fact that the polyclad lives within the mantle cavity of the snail.

Discussion of Hoploplana luracola

Since the original five species assigned to the genus Hoploplana by Bock (1913), there have been eight more added including one from the Pacific coast of North America. Inasmuch as the copulatory apparatus is very similar throughout the genus (Hyman, 1953, p. 346), external characters become important taxonomically. Hoploplana luracola is distinguished from its closest geographic neighbor H. californica Hyman, 1953, by lacking a papillate dorsal surface and having cerebral eyes extending behind the tentacles and a longer stylet. The nearest morphologically related species seems to be H. deanna Kato, 1939, from Mutsu Bay, Japan. This species can be distinguished from H. luracola by the different arrangement of the cerebral eye clusters and the number of tentacular eyes.

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Explanation of Plate 16

Haploplana luracola E. SMITH, spec. nov. Figure 1: Dorsal view of living worm. Figure 2: Dorsal view of clarified worm. Figure 3: Antero-dorsal part of body, showing eye patterns. Figure 4: Diagram of copulatory apparatus (reconstructed).

a - male antrum, c - cement gland, d - pharynx, e - ejaculatory duct, f - female genital pore, g - granule glands, h - spermiducal bulb, i - eyes, j - sperm, k - uteri, l - dark brown dorsal area, m - male genital pore, o - lighter brown dots, p - prostatic vesicle, s - stylet, t - tentacle, v - vagina, y - sperm duct.